

## EXPANDED AND GENETICALLY MODIFIED POPULATIONS OF HUMAN HEMATOPOIETIC STEM CELLS

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The present invention provides a method for promoting the survival and/or expansion of hematopoietic stem cells in culture, comprising culturing the cells in a culture including an effective amount of a mpl ligand, (particularly thrombopoietin), a flt3 ligand and interleukin 6 (IL6). Also provided is a method for modifying hematopoietic stem cells comprising contacting a gene delivery vehicle comprising a polynucleotide sequence with a population of hematopoietic stem cells cultured in the presence of an effective amount of thrombopoietin and a flt3 ligand. Additionally methods of restoring hematopoietic capability in a subject are claimed.

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